CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

SECRET

SECURITY INFORMATION

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This is UNEVALUATED Information 25X1

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25 YEAR RE-REVIEW

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In addition to structural design changes, but only as an auxiliary measure, the thrust was augmented from the 25 tons of the A-4 motor to the 32 tons of the R-10 motor. The increased thrust was achieved by merely increasing the pressure from 20 atmospheres of the A-4 to 25 to 26 atmospheres.

Although Germans were unable to make any experiments in Ostashkov, felt that the augmented thrust was feasible because of a series of tests that had been made in 1946. At that time, a German group working under Soviet supervision in Lehesten, in the Thuringian forest, had obtained a thrust of 38 tons with the A-4 motor. (The Soviet sponsored group in Lehesten was led by Ing. SCHOEFFMANN, while the thrust tests were carried out by Dr. UMPFENBACH. Both were later conscripted for work in Ostashkov. Ing. SCHOEFFMANN was repatriated in June 1952, and is presently residing in the Soviet Sector of Berlin where he is employed in a large transformer factory /not identified/. UMPFENBACH is still in the USSR.)

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Based on the data obtained raised the thrust of the A-4 motor in the R-10 project, as an additional measure towards achieving the Soviet requirements.

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this increase in the thrust is not necessarily beneficial. On the contrary, it will give rise to complicated heat questions. To obtain the increased range, the pressure must be somewhat increased. However, the emphasis must rather be placed on an increased combustion period. This will result in an increased range without the undesirable heat problems that arise from the high speed caused by greatly increased pressure and thrust.

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3.

there was no liaison whatever between the German personnel at Ostashkov and the German personnel at Khimki. Whether such a liaison existed between the Soviets at Ostashkov and Soviets at Khimki is not known

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4. calibrated diaphragms.

Flow regulators were provided to control the quantity flow of the fuels and bring the two fuels in correct proportion. These consisted of adjustable chokes which diminished the diameter of the two fuel lines. They were located in the main fuel lines, the exact position was between the pump and the motor. Each choke was to be calibrated by either injection tests or short combustion tests. The chokes were to be correctly regulated on the basis of suitable measuring devices.

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5. alcohol was to be replaced by kerosene as the "B" fuel in the final version of R-10 25X1

During the last stages of the R-10 project the Soviets requested the Germans at Ostashkov to attempt the substitution of kerosene for alcohol. The motor section carried out experiments to this effect on the newly constructed test stands. The experiments revealed that the substitution could be accomplished; that is, that the motor operated when kerosene was used as B-fuel. However, a considerable amount of work was still necessary, since the kerosene caused a great deal of soot and smoke. 25X1 the final version of the R-10 called for the use of alcohol as B-fuel. The failure to substitute kerosene for alcohol may have been due to 25X1 inability to make the necessary refinements for the kerosene in time for the project completion date. 25X1 the Soviet interest in kerosene was because: (1) kerosene is more readily available and cheaper to produce; and (2) kerosene has a higher heat energy, which results in a greater efficiency of the missile.

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